

The Influence of Attitude, Subjective Norm, and Perceived Behavior Control on the Early Detection of Cervical Cancer among Female Students

Santy Irene Putri

Study Program OF Midwifery, University of Tribhuwana Tungadewi, Malang

ABSTRACT

Background: Cervical cancer is the fourth most frequent female malignancy in the globe, affecting an estimated 527,624 women every year and resulting in 265,672 deaths. This study aimed to determine the effect of attitudes, subjective norms, and perceived behavioral control on early detection of cervical cancer in female students.

Subjects and Method: This was an analytic observational study with a cross-sectional approach. This study was conducted in Malang, East Java, Indonesia. The sample size of 350 female students was selected by simple random sampling technique. The dependent variable is the early detection of cervical cancer. The independent variables include attitudes, subjective norms, and perceived behavioral control. The data were collected by using a questionnaire and analysis using multiple linear regression.

Results: Attitudes ($b = 0.33$; 95% CI = 0.22 to 0.44; $p < 0.001$), subjective norms ($b = 0.12$; 95% CI = 0.01 to 0.22; $p = 0.029$), and perceived behavioral control ($b = 0.32$; 95% CI = 0.12 to 0.52; $p = 0.002$) has a relationship with behavior of early detection of cervical cancer in female students and statistically significant.

Conclusion: Attitudes, subjective norms, and perceived behavioral control are factors that influence the behavior of early detection of cervical cancer in female students.

Keywords: attitude, subjective norm, perceived behavioral control, behavior.

Correspondence:

Santy Irene Putri. Midwifery Study Program, University of Tribhuwana Tungadewi Malang. Jl. Telaga Warna, Tlogomas, Malang, East Java. Email: santyirene@gmail.com.

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BACKGROUND

Cervical cancer is a worldwide problem. Cervical cancer is the fourth most common female malignancy found worldwide, occurring in approximately 527,624 women each year and causing 265,672 deaths (Tekle et al., 2020). Cervical cancer accounts for 4% of all cancer diagnoses worldwide (Kessler, 2017). According to the World Health Organization (WHO), cervical cancer could cause 474,000 deaths in 2030, with 95 percent of

these deaths occurring in low- and middle-income countries (Sarvetani et al., 2021). Cervical cancer is a type of cancer that affects cervical cells, most often in the transformation zone, where glandular cells from the endocervical transition to squamous cells from the exocervix. Cervical cancer is caused by infection with human papillomavirus (HPV) (Gates et al., 2021; Hillemanns et al., 2016). The human papillomavirus that causes cervical cancer originates in the

female reproductive system. There are two types of human papillomavirus (HPV), HPV-16 and HPV-18, which account for 70% of all cervical cancer cases worldwide.

Cervical cancer can be prevented by effective cervical cancer screening tests to detect precursors before a woman develops symptoms, and are easy to treat or cure if detected early (Alemnew et al., 2020; Mengesha et al., 2020). The results of a study conducted in several places reveal that cervical cancer screening programs are underutilized to the maximum. Some of the reasons for not using screening services are lack of awareness, negative attitudes towards cervical cancer screening, and misconceptions about the seriousness of the disease. There is a need to remove these barriers to reduce the incidence and mortality from cervical cancer by increasing the use of cervical cancer screening services (Dillner, 2019). Cervical cancer not only causes great morbidity and mortality, but also poses economic risks, resulting in very high direct costs to the health system, society, and households, as well as loss of patient productivity, premature death, and disability. Cervical cancer-related deaths are rare in high-income countries (Tekle et al., 2020). As a result, awareness should be raised, and efficient screening and prevention services should be available to aid early detection and treatment (Wollancho et al., 2020; Anwar et al., 2018).

According to Tapera (2017), most of the participants did not get a pap smear because they thought they were underage, did not see the need for it, and didn't know where it was done; this could be because they believe that they are not at risk of cervical cancer. The main barriers to Pap smear testing, according to participants in a study in Iran, were lack of time, financial challenges, fear of test results, and lack of awareness (Bahmani et al., 2016). The

majority of students believe that the Pap smear test is used to detect cervical cancer that has already developed. Many of the reasons given by respondents can be classified as misunderstandings that require extensive public education, with renewed emphasis on the critical fact that Pap smear screening is primarily aimed at detecting precursor lesions that appear early in the course of the disease, and in a timely manner. treatment will thus stop the progression of the disease to invasive cancer (Tapera et al., 2017). Increased awareness of women, increased knowledge and capacity of providers, and efficient monitoring and evaluation methodologies are the most common problems in cervical cancer prevention initiatives in developing countries. Women in many developing countries, according to research, have a poor understanding of the causes, risks, and prevention of cervical cancer (Thapa et al., 2018; Liu et al., 2017). As a result, women's perceptions of cervical cancer and screening are very important. Attitudes towards perceived risk, screening methods used, and pain felt during screening have all been associated with influencing decision making about whether or not surgery is performed (Mukama et al., 2017).

Theory of Planned Behavior (TPB) has been shown to accurately predict health behaviors such as getting a general health checkup, getting a mammogram, and getting a colorectal cancer screening. Furthermore, research examining cervical cancer screening using the Theory of Reasoned Action or TPB component shows that it is useful in predicting cervical cancer screening (Roncancio et al., 2013). In high- and middle-income countries, cervical cancer is the most frequently screened malignancy. Cervical cancer incidence and mortality have been reduced by 80% in industrialized countries thanks to population-based cervical cytology

screening programs that involve Papanicolaou testing every 3 to 4 years. The widespread and systematic use of the Papanicolaou (pap) smear test, an effective, easy-to-apply, inexpensive, benign and highly sensitive early diagnosis tool, has helped industrialized countries reduce cervical cancer incidence, treatment burden, morbidity, and mortality (Nayir et al. al., 2015). The theoretical basis for this research is TPB. Attitudes, subjective norms, perceived behavioral control, and behavior are important elements in Ajzen. Research conducted by researchers aims to determine the effect of attitudes, subjective norms, and perceived behavioral control on the behavior of early detection of cervical cancer in female students.

SUBJECTS AND METHOD

1. Study Design

This was an analytic observational study with a cross sectional design. The study was carried out in Malang City, East Java, from May to June 2021.

2. Population and Sample

The sampling technique used is simple random sampling because the sampling of population members is done randomly without regard to the existing strata in the population. The inclusion criteria in this study were female students aged 17-35 years. The population in this study were all female students in the city of Malang. The number of samples taken in this study using the Lemeshow formula, this is because the total population is unknown. Through this formula it is known that the minimum number of samples taken by researchers is 100 people. During the study, researchers obtained a sample of 350 female students.

3. Study Variables

The independent variables in this study include attitudes, subjective norms, perceptions of perceived behavioral control. As for

the dependent variable in this study is the prevention behavior of cervical Ca.

4. Study Instrument

The data collection instrument used in this study was a questionnaire from several points, namely attitudes, subjective norms, perceived behavioral control and early detection behavior of cervical cancer which was compiled based on a literature review as a source and carried out a reliability test using Alpha Cronbach with SPSS.

5. Data Analysis

After the data was collected, the researchers conducted a normality test using the Kolmogorov Smirnov test with SPSS. The data that has passed the normality test are then analyzed using multiple linear regression with SPSS.

6. Research Ethics

This research has been approved by the ethics committee of the Health Research Ethics Committee of the Indonesian Institute of Health Sciences STRADA No. 2474/KEPK/IV/2021.

RESULTS

1. Characteristics of Samples

Based on the data presented in Table 1, information was obtained that most of the respondents involved in this study were aged 17-25 years (88.6%). Education of respondents who dominate is diploma 4, namely 127 respondents (36.2%).

2. Multivariate Analysis

Based on the data presented in Table 2, it is known that the regression coefficient for the attitude variable is positive, meaning that if the attitude variable increases by one unit, it will increase the behavior of early detection of cervical cancer by 0.33 units. This shows that there is a relationship between attitudes and behavior for early detection of cervical cancer and it is statistically significant.

The regression coefficient for the subjective norm variable is positive, meaning

that the higher the subjective norm, the behavior of early detection of cervical cancer will increase. The b value of 0.12 indicates that subjective norm value can be increased by one unit. The behavior of early detection of cervical cancer will increase by 0.12 units, meaning that there is a positive relationship between subjective norms and the behavior of early detection of cervical cancer and is statistically significant.

The regression coefficient for the perceived behavioral control variable is posi-

Table 1. Characteristics of Samples

Characteristics	Criteria	n	%
Age	17 - 25 years	310	88.6
	26 - 35 years	40	11.4
Age of first menarche	9	100	28.5
	10-14	220	62.9
	≥15	30	8.6
Education	Diploma 3	80	22.9
	Diploma 4	127	36.2
	Strata 1	122	34.9
	Strata 2	21	6
Father's education	SHS	98	28
	Diploma 3	82	23.4
	Diploma 4	85	24.3
	Strata 1	68	19.4
	Strata 2	17	4.9
Mother's education	SHS	102	29.1
	Diploma 3	97	27.8
	Diploma 4	85	24.3
	Strata 1	58	16.5
	Strata 2	8	2.3
Father's occupation	Civil servant	7	2
	Farmer	23	6.6
	Private employee	274	78.3
	Entrepreneur	46	13.1
Mother's occupation	Housewife	286	81.7
	Private employee	58	16.6
	Entrepreneur	6	1.7
Status	Single	338	96.6
	Married	12	3.4
Family Income	< Minimum wage	189	54
	≥ Minimum wage	161	46
Family Type	Main family	197	56.3
	Big Family	109	31.1
	Broken family	44	12.6
Family history of cervical cancer	No	293	83.7
	Yes	57	16.3

tive, meaning that the better the perceived behavioral control, the higher the early detection behavior of cervical cancer. The b value of 0.32 indicates that if the perceived value of behavioral control can be increased by one unit, the behavior of early detection of cervical cancer will increase by 0.32 units, meaning that there is a positive relationship between perceptions of perceived behavioral control and early detection behavior. Cervical cancer and statistically significant.

Table 2. Multivariate analysis of the influence of attitude, subjective norm, and perceived behavioral control on early detection of cervical cancer in female students

Independent Variable	b	95% CI		P
		Lower Limit	Upper Limit	
Attitude	0.33	0.22	0.44	<0.001
Subjective norm	0.12	0.01	0.22	0.029
Perceived behavioral control	0.32	0.12	0.52	0.002

n observation= 350
Adj R²= 0.37
p<0.001

DISCUSSION

In general, the results showed that the respondents in this study had a good understanding of the relevance of Pap Smears and had high confidence in this type of test as a means of cervical cancer prevention. The results also show that female students, regardless of attitudes, subjective norms, and perceived behavioral control, should still be provided with basic information about the Pap Smear test and its significance in cervical cancer prevention. Internal cognitive behavioral aspects are the focus of the TPB. In terms of an individual's view of behavior, TPB has the ability to predict behavioral intentions. According to TPB, positive or negative perceptions of performing a behavior (attitudes), perceptions of the importance of believing or not the behavior should be carried out (subjective norms), perceptions of the ease or difficulty of performing the behavior (perceived behavioral control), and plans to perform the behavior are influences. primarily on individual behavior in real terms.

Over the last decade, cervical cancer prevention has undergone dramatic changes. Human papillomavirus (HPV) vaccination programs have resulted in a significant reduction in cervical disease caused by HPV in many countries. Economic factors and the various health care priorities of different countries, as well as the availability of vaccines and in certain cases, the emer-

gence of doubt about vaccines in the community, can hinder broad implementation. In this regard, cervical cancer screening will continue to play an important role in cervical cancer prevention, and will need to adapt to the increasing prevalence of HPV-associated neoplasia in the future (Shiraz et al., 2020; Catarino et al., 2015).

Efforts made to take advantage of technological advances in cervical cancer prevention aim to reduce gaps in the utilization of health services. New technologies available offer alternatives to screening and treatment for precancer and can help decision makers reach women at risk more effectively. HPV DNA test, RNA-protein test, IVA (visual examination with acetic acid), high-resolution micro-endoscopy, and digital colposcopy are some examples of technological advances in the health sector. Revenues, expenditures, and the requirements and complexity of infrastructure, on the other hand pose challenges in their utilization, which become obstacles to long-term implementation. Due to the lack of cervical cancer screening among low-income women, barriers related to information, attitudes, and beliefs have a role in minimizing disparities, such as common misconceptions. Barriers from the aspect of women's attitudes include lack of interest, being a virgin, not having a sexual partner, being too young, and being asymptomatic. Other barriers include socioeconomic and educational levels, as well as a

lack of screening and follow-up services (Sauvaget et al., 2016).

Cervical cancer can be cured if diagnosed early and well controlled. The Pap smear test is a screening tool that helps in the early diagnosis, prevention, and treatment of cervical cell disorders that can cause cancer. According to the TPB, a person's intention to participate in a behavior is the best predictor of behavior; This critical variable is predicted by two behavioral variables (general or negative evaluation of behavior) and subjective norm (general perception of social pressure to take action). The success of this theory in understanding behavior is determined by the extent to which behavior is actively regulated. They often act on their own perceptions and perceptions of what others believe they should do, and their willingness to accept behavior may be influenced by those with whom they have close relationships. According to this theory, a person's subjective norms are the result of a multiplicity of normative beliefs in the drive to engage in desired behavior regardless of expectations. Furthermore, perceived behavioral control is defined as a person's perception of how much a person can control how much they do or do not perform a behavior (Jeihooni et al., 2021; Ncube et al., 2015)

Subjective norms, perceived behavioral control, and behavioral attitudes all played a larger role in Zhang's (2019) study, whereas objective promotion factors played a lesser impact. They interact with each other, according to current research. It is very important for interventionists to ensure that women feel support from significant others and that their confidence in their ability to overcome obstacles increases, as the latter will increase the benefits of other variables. Because the objective promotion element is weakest, it needs to be improved. Women should develop these factors, as well

as their perception of them, to improve their behavior (Zhang et al., 2019; Getahun et al., 2020).

Increased information and perceived power helps women to evaluate their control beliefs positively and empowers them to create capabilities against social norms that can compete with the use of cervical cancer screening services, as well as build attitudes that support these habits (Abamecha et al., 2019). Finally, based on the findings of this study, healthcare professionals/practitioners should place a strong emphasis on the benefits and understanding of women's cervical cancer screening intentions. This is due to the fact that today's individuals like to understand the situation first, then get motivated, feel comfortable, and then happily carry out the proposed behavior.

The results of this study indicate that the behavior of early detection of cervical cancer in female students is positively correlated with attitudes, subjective norms, and perceived behavioral control.

AUTHORS CONTRIBUTION

Santy Irene Putri did data collection, did data analysis, and wrote the manuscript.

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CONFLICT OF INTEREST

There is no conflict of interest in this study.

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